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Naval bases, Arsenals, Aplekta: Logistics and Commands of the Byzantine Navy (7th-12th c.)

ὁ στόλος ἐστὶν ἡ δόξα τῆς Ῥωμανίας – this famous bon mot of Kekaumenos[1] amply demonstrates an obvious fact, namely, that mid-Byzantine rule was largely based on its navy not at least due to its geographic scope on islands, coastal regions, and their respective hinterlands. In a recent study, Ewald Kislinger highlighted that Kekaumenos wanted to signal the former glory of the navy which had dramatically decayed in his lifetime[2]. Ultimately, this statement relies on the notion of thalassocracy, most elaborately developed in Pericles' speeches about the Athenian navy, forged by Thucydides: μέγα γὰρ τὸ τῆς θαλάσσης κράτος[3] and ἐγὼ δὲ ἀποφαίνω δύο μερῶν τῶν ἐς χρῆσιν φανερῶν, γῆς καὶ θαλάσσης, τοῦ ἑτέρου ὑμᾶς παντὸς κυριωτάτους ὄντας, ἐφ᾽ ὅσον τε νῦν νέμεσθε καὶ ἢν ἐπὶ πλέον βουληθῆτε καὶ οὐκ ἔστιν ὅστις τῇ ὑπαρχούσῃ παρασκευῇ τοῦ ναυτικοῦ πλέοντας ὑμᾶς οὔτε βασιλεὺς οὔτε ἄλλο οὐδὲν ἔθνος τῶν ἐν τῷ παρόντι κωλύσει[4]. This notion contains a strong idea insofar as only the sea allows to expand unrestrictedly over a vast space and adjacent territory, which in turn is a very interesting aspect for every empire throughout history.

Yet even before the mid-11th century, thalassocracy was not an objective of Byzantine politics[5], if it ever was an objective of any pre-modern political entity. Instead, Byzantium was interested in maintaining the sea-lanes between the various parts of the empire and protecting crucial points of strategic or economic importance at the coast. This alone was a tremendous task in times of the Arab advance till the 10th century and the subsequent emergence of the competing navies of the Italian »sea-republics«. It is dubious if the navy was deployed by the empire for promoting or facilitating maritime commerce[6] although both spheres were consciously connected, although usually naval power and the volume of maritime trade grow and fall together over the centuries[7]. Far more convincing seems to be the evaluation of Kolditz that commercial ports and commercial maritime routes cumulated and expanded in areas of tighter naval covering[8] because security was of paramount importance for merchants.

In the last decades, enormous research progress has been accomplished in manifold aspects of the Byzantine navy, be it its creation in the mid-7th century[9], its changing command structure, the types of ships used[10], its terrifying weapon – the so-called Greek fire[11] (ὑγρὸν πῦρ: strictly speaking, liquid fire) –, navigation[12] and much more. Surprisingly, one essential aspect escaped attention in these studies, namely how the war fleet and the ports of the empire interacted. Since Ahrweiler's *opus magnum* no major study has been undertaken on this subject[13]. In an appendix devoted to this aspect,[14] she claimed that we cannot derive any information about the actual fleet bases from the source texts[15]; a statement appearing correct regarding the main sources for the Middle Byzantine navy (*De ceremoniis* and several military *tactica*). Nevertheless, we may gain skeletal information about relay ports in the context of fleet operations from historiographical sources.

From the opposite perspective, every study on the Byzantine war fleet should consider the port system of Byzantium, in other words, the interface between sea and land-based military forces and the hierarchy between the navy's ports[16]. Ahrweiler limited her efforts to listing coastal towns where state officials are documented[17], while most other studies did not at all consider this aspect of the interaction between navy and ports. This, in fact, forms a stark contrast to the schol-

1   Cecaumeni tactici Vademecum, cap. 87 (Litavrin 308. – Beck 147): »The navy is the glory of the Rhōmania.« In similar veins, Emperor Nikephoros II purpotedly claimed to have supreme naval power in 968: »navigantium fortitudo mihi soli inest« according to Liudprandi episcopi Cremonensis Relatio de legatione Constantinopolitana, cap. 11 (Chiesa 192).
2   Kislinger, Ruhm.
3   Thucydidis De bello Peloponnesiaco I 143,5: »The rule of the sea is indeed a great matter«. – For this topic, see latest: Kopp, Das Meer.
4   Thucydidis De bello Peloponnesiaco II 62,2: »The visible field of action has two parts, land and sea. In one of these you are completely supreme, not merely as far as you use it at present, but also to what further extent you may want to: there's nobody able to stop you going with your naval vessels, neither the [Persian] king nor any other nation on earth.«
5   Ahrweiler, L'escale 161-164.
6   Ahrweiler, Les ports 267. Yet this has been the case for the sea-republics of Genoa, Pisa and Venice because merchants had a great deal of influence on naval policy: Tangheroni, Economia.

7   McCormick, Origins 438.
8   Kolditz, Horizonte 72-75.
9   Cosentino, Constans II. – Zuckerman, Learning from the Enemy.
10 Pryor/Jeffreys, Age of the δρόμων. – Concerning the Late Antique navy, preference should be given to the rectifications by: Zuckerman, Byzantine Dromon.
11 Bryne/Haldon, A Possible Solution.
12 Arnaud, Les routes.
13 A minor exception is Alkiviadis Ginalis in his PhD thesis, who outlines in a very general way the features of naval bases: Ginalis, Byzantine Ports 57-64.
14 Ahrweiler, Byzance et la mer 419-439.
15 Ahrweiler, Byzance et la mer 427-428.
16 The issue to investigate hierarchy instead of size of ports was highlighted by Kolditz, Horizonte 89-90, based on Schörle, Constructing Port Hierarchies.
17 Ahrweiler, Byzance et la mer 90-91.

arship on the Roman navy, e.g.: »étudier l'infrastructure de système naval romain supposer naturellement qu'on établisse une carte des ports que la marine impérial a utilises au cours de son histoire«[18]). As Reddé has stressed regarding Antiquity, there are no obvious termini for military ports in neither Greek nor Latin: »la création de ports exclusivement militaires est extrêmement rare dans l'Antiquité, ce qui explique peut-être qu'il n'existe pas de vocable grec ou latin pour désigner de telles installations«[19]. Keeping this observation in mind, military functions of certain ports have to be surmised by circumstantial evidence, especially because exclusive military ports were almost non-existing[20]. Thus, the opposite perspective must be taken: Ports could generally serve three different needs for pre-modern war fleets.

First, there are ports where warships could anchor for a certain time to be equipped or to collect an armada for an orchestrated operation. These ports usually had specific storage and repair facilities and may be called relay stations, in Byzantine texts very often coined as ναύσταθμοι. As a specific derivate of relay stations – which, though, constituted no ports – we can consider ἀπλήκτα for mooring (ὁρμεῖν, ὁρμησία)[21], which served to gather a larger fleet that could neither be supplied by a port nor anchored in a harbour due to a size of more than 100 ships.

Because warships[22] had to be put ashore in winter times (from November to February: see McCormick's exhaustive treatment of the phenomena of *mare clausum* and *mare navigationis* in the period considered here)[23] and when not being in operation, for preventing an attack by the *teredo navalis*, rotting, and to extend their overall longevity by regular breaming[24], a permanent fleet base had to have shipsheds: »to ensure an ancient warship's effectiveness, it had to be kept as dry as possible. And so, the principal features of an ancient naval base were the shipsheds where the galleys with their wooden gear were kept under cover, and the sheds where their sails and rigging were stowed away.«[25] The average lifetime of antique and medieval warships we know of was between 13 and 26 years; Venetian galleys endured approx. 20-26 years[26]. The main feature of shipsheds in Antiquity and the Middle Ages was the stone slip on which the

boat rested. Hellenistic shipsheds – being 6.2 to 6.4 m wide – most often housed two bi-/triremes under one roof[27], as was the case also in 11th-13th-century Amalfi where the building's length was much increased in comparison to that, though[28]. By constrast, later Italian (Venetian as Ligurian alike) as well as Seljuk and Ottoman shipsheds were, according to early lithographic depictions, single facilities[29]. At the moment, we do not know how Byzantine shipsheds looked like due to the lack of any archaeological evidence.

A port appropriate for the wintering of vessels, which was consequently equipped with shipsheds, feature in Greek sources rather as λιμήν (Latin *portus*), while a harbour without any kind of installation was usually called ναύσταθμος (Latin *statio*)[30]. In other words, unlike harbours, ports had and have man-made installations like moles and marine terminal facilities and provide shelter to ships also in winter times. Consequently, the many ναύσταθμοι considered by Ahrweiler as naval bases or even as arsenals have to be dropped when further evidence is lacking (e.g., Nicomedia, Kios), regardless of whether government officials are attested there.

The third possible use of a port for a war fleet is as site of construction which is commonly expressed by the term *arsenal* since the Late Middle Ages. As I want to argue, Ahrweiler came to assailable conclusions because she equated all these port functions, especially in her study on the maritime offices[31]. Actually, it is not even certain whether ships were built in ports: »das räumliche Verhältnis zwischen Häfen und Werften gehört zu den wenigen weiterhin ungeklärten Fragen der Forschung, da unsicher ist, ob der Bau von Schiffen direkt in den Häfen stattfand oder völlig getrennt von diesen«[32]. Particularly in regard to warships, doubt can be cast on the assumption that they were built in public ports due to security issues (fire, espionage) and the more refined timber supply needed for them.

Relying on the Byzantine testimonies on warship-building, we may surmise that the construction of Byzantine warships was concentrated on a few selected and secure ports as we can observe later in Venice and the Ottoman empire. Were there even provincial arsenals operating in Byzantium? Ahrweiler and Letsios arrived at a affirmative response without

18 Reddé, Mare nostrum 145.
19 Reddé, Mare nostrum 148.
20 Reddé, Mare nostrum 145-147.
21 Leonis VI imperatoris Naumachica 30 (Jeffreys 496). – cf. Carile/Cosentino, Storia della marineria 247; Haldon, Constantine Porphyrogenitus, Three Treatises 155. – Haldon, A Critical Commentary 404. – For terrestrial *aplekta* cf. Kolias, Peri aplēktou. – A natural bay suitable for mooring is called ὁρμισία. Such a bay is mentioned in the *Life* of Pancratius of Tauromenion: after sailing to Naxos, the saint disembarked in Phalkoni, which is styled as bay for mooring without a harbour (Ps.-Euagrii Siculi Vita Pancratii episcopi Tauromenii [Stallman 40]): […] κατήχθημεν ἐν τόπῳ ἐπιλεγομένῳ Φάλκωνι. οὐ μέντοι ἦν λιμὴν ἐν τῷ τόπῳ, ἀλλ᾽ ὁρμισία τις˙
22 Concerning commercial ships this did not have to be the case, cf. Blackman, Ancient Harbours 204. – In general cf. Wawrzinek, Tore zur Welt 182-192.
23 McCormick, Origins 450-468. – Of note, March, 5 was regarded as the traditional beginning of Roman commercial shipping according to John Lydus: Ioannis Lydi De mensibus IV 45 (Wuensch 101; Hooker 94). – According to the mid-9th to mid-10th century Mardaïte calendar, *chelandia* and *galeai* [γαλλοίες] were not supposed to enter the sea between 14th Nov (St. Philipp) and 15th Feb,

cf. Lampros, Τρία κείμενα 173, lin. 13-4. – Dagron, Firmament 148. This text was previously dealt with by Dolley, Meteorology, as well.
24 The burning of the weed and barnacles growing at the hull, see: Kemp/Dear, Oxford Companion to Ships 106.
25 Casson, Ships and Seamanship 363.
26 Casson, Ships and Seamanship 90. – Lane, Navires 259-260. This is mainly because the Venetians used seasoned timber to provide maximum stability of the overall construction.
27 Lehmann-Hartleben, Die antiken Hafenanlagen 111-114. – Blackman, Ancient Harbours 205-206. – Blackman, Double Shipsheds. – Hurst, Exceptions 31-34.
28 Gargano, Arsenali e scaria 133-134.
29 Venice: Giapitsoglou, Les arsenaux Vénitiens. – Alanya: Johns, Tersana at Al-anya.
30 Isidori Hispalensis Etymologiae XIV 8, 39-40: *Navalia sunt loca ubi naves fabricantur. Hoc et textrinum vocatur. Statio est ubi ad tempus stant naves; portus, ubi hiemant*[…]. – Ashburner, The Rhodian Sea-Law 77. – Letsios, Seegesetz 104. – Rougé, Ports et escales 69-70. – Blackman/Rankov, Shipsheds 17.
31 Ahrweiler, Fonctionnaires 244.
32 Wawrzinek, Tore zur Welt 107-108.

any hesitation and assumed many provincial arsenals operating in close combination with mercantile shipbuilding[33]. This postulated diffusion relied also on the terms of ἐγχώρια and τοπικά [πλοία: ships] found in the sources, clearly relating to provincial ships operating in a restricted area but not necessarily being built there, opposed to what Ahrweiler implied (»En général, la flotte construite par les moyens procurés par la population des régions constituent des thèmes maritimes[34]«). At any rate, we need to reconsider the evidence on warship-building[35] to get a better understanding of the Byzantine navy and its peculiarities in comparison to the navies of their adversaries.

In modern terminology, a military port that is used to station and repair warships and also the facilities to build them is designated as dockyards[36]; it is established that there were no dockyards before the 15th century according to a strict application of the English term. Instead, the term shipyards should be preferred, which designates foremost a place of shipbuilding that is also used for maintenance and dismembering of disused vessels to salvage timber and fittings[37]. The latter two activities could easily be carried out also outside of shipyards, however.

Source terms

To establish a differentiation between the various ports serving the Byzantine navy, some terminological investigation is due. There were different missions war vessels were conducting[38]. Not only warfare, but also combatting piracy, transferring land forces, blocking troops while trying to traverse rivers and straits, and diplomatic missions were conducted with squadrons of the Byzantine navy[39].

While Ahrweiler, Letsios and Pryor understood ναυπήγησις as a general term for the construction of ships (regardless

of whether for the navy, fishery, or trade)[40], it features also, as Haldon has recently stressed, as a term designating the repair of ships[41]. However, the term may also designate the construction of warships, like in Syrianos' strategicon of the 10th century[42] and a few other instances[43]. Italian *naupegio* derived from it[44]. An oarsman with training in the profession of a ship's carpenter/shipwright (ναυπηγός) had to be present on every operating vessel according to the Rhodian sea-law[45] and several *tactica*[46], for repairing the ship after an eventual incident.

The armament of warships was usually described by the terms ἐξάρτυσις [ἐξάρτησις being a common iotacized variant[47]] and later by the term ἐξαρτισμός. As such it is used in the *tactica*[48], lexica[49], and it was also in use to denote the proper outfitting and loading of cargo for a merchant vessel[50]. It was – like the similar terms of ἐξόπλισις and ἐξέλασις [πλωΐμων][51] – actually never used for the actual shipbuilding[52]. The imperial office of the ἐξαρτιστής belonged to the bureau of the βεστίαριον and was responsible for »fitting out« the central fleet based in Constantinople in the mid-Byzantine period[53]. The χαρτουλάριος τῆς λεγομένης ἐξαρτήσεως mentioned in the late-9th century fabricated so-called synodical letter to Emperor Theophilos may refer to the same office. According to the text, it was being held by Basileios, a close associate of Emperor Leo V[54].

Ahrweiler presumed that also the office of the ἐπεικτής was involved in the construction of the central fleet.[55] However, the office was not directly linked to the navy but rather to imperial grand projects[56], be they construction works of buildings or in rare cases also warships as it had been the specific case in 714 when the Arab siege fleet was expected to attack the capital[57]. In unspecified mentions we cannot know what a ἐπεικτής was appointed for; like in Thessalonica at the turn of the 9th/10th century[58], in 10th-century Abydos[59], in 10th-century Thrakesion[60] or in Lemnos in 1016[61]. There

33 Ahrweiler, Byzance et la mer 425. – Letsios, Seegesetz 84.
34 Ahrweiler, Byzance et la mer 135.
35 Rose, Medieval Naval Warfare 7: »There were also [not only Arab], of course, dockyards or ship building and repair facilities in the later Byzantine Empire particularly in the immediate vicinity of Constantinople itself. Very little is known about their organisation or their working methods.«
36 Kemp/Dear, Oxford Companion to Ships 255-256.
37 Moser, Shipyard Archaeology 838-839.
38 For the Roman period cf. Reddé, Mare nostrum 323.
39 The seminal study of Drocourt, L'ambassadeur byzantin 191-195, highlights that the texts rarely detail the ship type used, and that, if the diplomatic business was not considered most urgent, also merchant vessels were used for the transport of envoys.
40 Ahrweiler, Byzance et la mer 426. – Pryor/Jeffreys, Age of the δρόμων 152. – Letsios, Seegesetz 83. Example in Michaelis Pselli Chronographia IV 26 (Reinsch 65) concerning civilian shipbuilding in Paphlagonia.
41 Haldon, Theory and Practice 230 n. 99. – Letsios, Seegesetz 128-129.
42 Syriani magistri Strategicon, cap. II 4 (Dennis 12): Τὸ δὲ χρηματικὸν ἔστι μὲν ὅτε καὶ ἄλλων ἕνεκεν κοινωφελῶν πραγμάτων ἐπινενόηται, οἷον ναυπηγίας, τειχοποιίας, μάλιστα δὲ διὰ τὰ ἀναλώματα τῶν στρατιωτῶν· τῶν γὰρ κατ' ἔτος δημοσίων εἰσόδων ἐνταῦθα τὰ πλεῖστα καταναλίσκεται.
43 Letsios, Seegesetz 83.
44 Carile/Cosentino, Storia della marineria 29.
45 Lex Rhodia II 4 (Ashburner 1). The date of the law collection is controversially debated, cf. Troianos, Pēges 175-178.
46 Leonis VI imperatoris Tactica XIX 5 (Dennis 504). – Leonis VI imperatoris Naumachica § 5 (Jeffreys 486).

47 DuCange, Glossarium coll. 394-395 differs the two terms on semantic grounds: the first meaning an activity, the latter a locality.
48 Leonis VI imperatoris Tactica XIX 23 (Dennis 512) and XX 170 (Dennis 594-596). – Leonis VI imperatoris Naumachica § 5 (Jeffreys 484).
49 Suidae Lexicon s. v. ἐξάρτυσις (Adler II 302).
50 Lex Rhodia III 11 (Ashburner 19).
51 Letsios, Seegesetz 54. – Antoniadis-Bibicou, Études 39.
52 Therefore, taking *exartysis* and arsenal as synonymous terms is debatable, *pace* Oikonomides, Listes 316.
53 Philothei protospathari Cleterologion (Oikonomides, Listes 121, 21). – Georgii Pachymeris Relationes historicas XII 34 (Failler 607). One of them is documented by a seal: Eustratios (turn 9th/10th c.), cf. Zacos/Nesbitt, Byzantine Lead Seals II no. 150. – Duran Duelt, Métiers et travaux (in press).
54 Epistula ad Theophilum imperatorem, cap. 39 (Munitiz 115). – Epistula synodica ad Theophilum, cap. 18 (Munitiz 179).
55 Ahrweiler, Byzance et la mer 422. The recent study by Leveniōtis, Epeiktēs, arrives at similar conclusions like those presented here.
56 That is already explained by Reiske as comment in: Constantini Porphyrogeniti imperatoris De ceremoniis (Reiske II 495). Further mention of another one in Theophanis continuati Historia VI 15 (Bekker 362).
57 Theophanis confessoris Chronographia a. a. 6206 (Boor 384. – Mango/Scott 534).
58 Zacos/Nesbitt, Byzantine Lead Seals II no. 96.
59 Nesbitt/Oikonomides, Byzantine Lead Seals III no. 40.2 (Stephanos).
60 Nesbitt/Oikonomides, Byzantine Lead Seals III, no. 2.8 (Michael).
61 Acta monasterii Laurae 20, 79 (Lemerle et al. I 160).

is no indication to allow generally pocketing the ἐπεικταί in the navy.

At any rate, related to the construction of ships is the general term πλοιοποιΐα[62] and the more specific one καραβοποιΐα employed in Emperor Leo VI's *tactica*, which designates the construction of ships for the state[63], in other words, of warships (καραβός used in the latter case for the Late Antique war vessel[64]).

More valuable ships of any kind were caulked with pitch at their rump because of their frame-based hull design. That process was called καλαφάτησις[65] (Latin: *stuppare*) and is also mentioned regarding dromones[66]. Emperor Michael V's (1041-1042) father was supposedly working as καλαφάτης which was deemed disgraceful ancestry[67]. The origin of Greek καλαφατίζω is controversially discussed in scholarship[68] (in Venetian adopted as calafai[69]). Byzantine building held its superiority in many regards till the fall of Constantinople as can be seen in the attempts of the Italian sea-republics to attract Greeks in their respective arsenals[70].

Around 1200 CE the relevant Italian terminology entered Greek by the new ship type Tarida[71], i. e. the Italian improved transport war galley (derived from Arabic tarrīda), as τάριτα and κάτεργον/α[72] (Ottoman Kadırga) with the effect of the new term of the κατεργοκτισταί which signals constructors of these warships[73]. Somewhat later, the word arsenal made its appearance in Greek. The Arabic term dâr al-sinạ'a (»house of work«)[74], followed by dâr sinâ'at al-bahr, entered Greek as ταρσανάς[75] and ἀρσανάς[76], either directly, or indirectly via Italian *darsana/dàrsena* testified somewhat earlier[77]; its most prominent examples are the *arzanà* of Venice established in ca. 1104[78], the *tersanaie* in Pisa from 1159-1161[79], the 11th-century *tarziena* in Amalfi[80] with its access via the »Porta de Sandala« (a very telling toponym from the Greek χελάνδια), and the *darsana* in Genoa of 1163 (near S Marco)[81]. On Hospitaller Rhodes, in turn, it became known as *tersanal*[82], and the Turks called their warship construction sites *tersana*[83]. For these reasons, the alleged inscription mentioning a ἀρσινάλης supposedly built by Emperor Theophilos (829-842)[84] is inconceivable[85], because this Greek term relies on the French variant *arsenal*[86] and is far too early, as well.

Still prevalent in Palaiologan time, though, are the Classical terms νεώριον (whole port complex) and νεώσοικος (shipshed), sometimes being taken as synonymous terms, because νέωσοικος is taken as *pars pro toto*[87], which roughly corresponds to Latin navale/navalia[88]. The terms refer to a port area designed for ship construction by a public body in separation to private shipbuilding[89], whether for trade or fishing.

The origin of νεώρια is closely linked to the phenomenon of functional segregations of ports, which can be traced back to Hellenistic times[90]. Coastal cities with more than one port divided the functions between them, while those with only one port created functional distinctive port areas. This phenomenon is attested so far for the Hellenistic period in Syracuse[91], Carthage[92], Cnidus[93], Rhodes[94], Cyzicus, Tyre,

62 Theophanis confessoris Chronographia a. a. 6146 (Boor 345. – Mango/Scott 482).
63 Leonis VI imperatoris Tactica XX 71 (Dennis 560).
64 Letsios differentiates between the Late Antique warship of that name and of the general term designating a small ship, cf. Letsios, Seegesetz 96. – Miracula Demetrii, mir. II 4 (Lemerle I 213, 22: γοῦν δέκα ἐνόπλους καράβους and 221, 10).
65 Some scholars supposed to set *kalaphates* and *naupegos* equal, cf. Letsios, Seegesetz 128 n. 349. – Makris, Studien 157 n. 7. Pitching was applied on warships already in Antiquity, see Blackman, Context 13.
66 Constantini Porphyrogeniti imperatoris De ceremoniis II 44 (Flusin/Zuckerman 307.144).
67 Michaelis Pselli Chronographia IV 26 (Reinsch 65), (without actually using the term but circumscribing it).
68 Arabic origin from qalafa / قلف argued by Christides, Two Parallel Naval Guides 94. The first attestation of the term in 566 indicates a different origin: Oxyr. 55.3804.262; see also Bell (ed.), Greek Papyri in the British Museum V, no. 1852 (from Syene). Zervan, Die Lehnwörter im Wortschatz der spätbyzantinischen historiographischen Literatur, s. v. καλαφατίζω.
69 Ménard, L'arsenal 81.
70 Harris, Bessarion.
71 Bertoni, Tarida. – Manfroni, Storia I 454-455. – Antoniadis-Bibicou, Études 156.
72 Zervan s. v. τάριτα. – This ship type was strongly resembling the Italian *galee sottili* of the same period, see: Johns, Tersana at Alanya 186. In byzantine sources: Georgii Sphrantzae Chronicon VII 3 (Maisano 16) and IX 1 (Maisano 20), used by Emperor Manuel II in 1420/1421. In the chronicle of the Tocco (early 15th c.) it is occuring very often as κάτιργον. – In the 15th century, it is the most common Greek term, e. g.: Silvestri Syropuli Historia concilii Fiorentii II 13 (Laurent 114, 22).
73 Michaelis Choniatae epistola 65,8 (Kolovou 89). – Ginalis, Materielle Zeugnisse 61.
74 Fahmy, Muslim Naval Organisation 23. – Letsios, Seegesetz 84. – Makris, Studien 160-161. – Ahrweiler, Byzance et la mer 420. 425. 432. – Magoulias, Lives of the Saints 329.
75 First testimonies: Acta monasterii Castamoniti 18 and 90 (19th-c. copy of a 15th-c. document issued by Manuel II), there as the shipbuilding spot of the monastery at the Athos peninsula.Insofar, Zervan, s. v. ἀρσανᾶς, is misled in designating Venetian as the origin of the Greek term.
76 DuCange, Glossarium col. 125 s. v. ἀρσενὰς. First testimonies: Acta monasterii Cutlumusii 56, 12 (Lemerle 176), there in a document of the Abbot Sophronios of 1547, where this beach site is in the property of the monastery of Koutloumousion.
77 Bertoni, Dàrsena.
78 This date is disputed, though, cf. Ménard, L'arsenal 64; Lane, Navires 125-127. It is mentioned as ἀρσανᾶς in: Silvestri Syropuli Historia concilii Fiorentii XI 4 (Laurent 526).
79 Redi, Tersana di Pisa.
80 Gargano, Arsenali e scaria 133. – Grossi Bianchi, La costruzione 288.
81 Manfroni, Storia I 472-473. Testified for the first time in 1276 and later, the *darsena nuova* west of the city, cf. Balard, Les arsenaux génois 54.
82 Rossi, Hospitallers 318.
83 E. g., Alanya in 1229-1231, see: Johns, Tersana at Alanya. – Lloyd/Storm Rice, Alanya 16-20.
84 Makris, Studien 159. – Antoniadis-Bibicou, Études 170. – Müller-Wiener, Häfen 8 n. 19. – Ahrweiler, Byzance et la mer 432. – Guilland, Les ports 231-232.
85 The inscription is nowadays regarded as fictional, see Heher, Julianoshafen 58.
86 Kriaras, Lexiko II 219 s. v. ἀρσενάλιν/ἀρσενάς.
87 Photii Lexicon s. v. νεώρια (Theodoridis III 20) and Suidae Lexicon (Adler III 453): νεώρια καὶ νεώσοικοι. Μήποτε νεώρια λέγεται ὁ τόπος ἅπας, εἰς ὃν ἀνέλκονται αἱ τριήρεις καὶ πάλιν ἐξ αὐτοῦ καθελκονται, ὡς ὑποσημαίνουσι Λυκοὺργος τε καὶ Ἀνδοκίδης; Suidae Lexicon s. v. νεώσοικοι (Adler III 454): οἰκήματα παρὰ τῇ θαλάσσῃ οἰκοδομούμενα εἰς ὑποδοχὴν νεῶν, ὅτε μὴ θαλαττεύοιεν [...]. See also Letsios, Seegesetz 83-84. – For the Classical usage see: Blackman/Rankov, Shipsheds 16-17.
88 Redde 160-163. – Blackman/Rankov, Shipsheds 30.
89 Areas for these activities were usually called – derived from Latin *scala* (landing stage) – ἐσκάριον and depending on that term in turn again, *scarium* in Latin, see: Gargano, Arsenali e scaria 137 with refs.
90 Some scholars tend to believe that this separation already took place earlier, at the turn from the Archaic to the Classical period in Greece, see e. g.: Baika, Early Naval Bases.
91 Wawrzinek, Tore zur Welt 171.
92 Blackman, Ancient Harbours I 79-80. Phoenician Carthage's naval port exhibited ca. 150 shipsheds; the later Vandal war wharf was situated elsewhere, though, cf. Wawrzinek, Tore zur Welt 56-58.
93 Wawrzinek, Tore zur Welt 169.
94 Wawrzinek, Tore zur Welt 69-71.

Caesarea maritima[95], Acre/Ptolemais[96], Piraeus[97] and Alexandria[98]. For instance, Alexandria's main port (portus magnus) had shipyards[99], but not its western port Eunostos; at Piraeus, the Kantharos port for commercial shipping was segregated from the one of Zea[100]. The main reason for this appears to have been concerns of security from fire/arson, and secrecy[101] from enemy espionage targeting the navy, its facilities and construction techniques[102].

Unlike commercial ports or – more specifically – their particular port areas (i.e., ἐμπόριον[103]), which usually were furbished with roofed sections for trading activities, cranes, and warehouses[104] where cargos were landed (in Alexandria called ἐξαίρεσις[105]), warship construction sites lacked such installations but were often enclosed by walls. The enclosure was built for reasons of espionage[106] and was guarded[107]. The port exhibited armories and storehouses (σκευοθήκαι), caserns and the indispensable shipsheds (νεώσοικοι) from which the name derived (as *pars pro toto*). The seclusion of war port areas had a tradition long before the Venetian paragon[108]. Warship-building was considered as a state secret and espionage and intrusion in the respective ports was punishable by death in Hellenistic Rhodes (τῷ δὲ κατοπτεύσαντι ἢ παρελθόντι εἴσω θάνατος ὥριστο ἡ ζημία[109]) and Byzantium alike[110]. Such an enclosure is also depicted in the 6th-century mosaic of the port of Classe in Sant'Apollinare Nuovo[111].

A Greek term which might have a relation to the phenomenon of enclosed ports might be μανδράκι(ον), designating a certain kind of port or harbour. Considering the spatial and structural differences between commercial ports and naval bases, especially regarding the enclosure, one may wonder why no explicit nomenclature evolved in the Antiquity and the Middle Ages. Regarding Greek, this phenomenon might be explained by to the persistent use of Classical Greek terms by the authors, whereas in Latin an evolvement may be traced.

In the western Mediterranean naval bases have sometimes been coined as mandracchio since the High Middle Ages, even before the term arsenal was introduced, which had designed the construction facilities next to a mandracchio.

The first time the term is detectable, the μανδράκιον/mendracium was the name of a chained-off port district of Carthage that Belisarius conquered in September 533[112] and that was also the location of a monastery of the same name built after the conquest by the prefect Solomon[113]. Its etymology is unknown but in all likelihood, it is as ancient as the Phoenician port area designations and derives from the Semitic *mandra* (fold, enclosure: usually for sheep and cattle). How the word *mandracium* proliferated is untraceable but it reappears in Medieval Italy. It is attested in Genoa as mandràccio[114], in Naples as mantracchio[115], and in Ancona as mandràchio[116], as well as in the Renaissance era in Livorno (mandraccio), Venice (mandràcio), Kerkyra (mandraggio), and Zara (mandraccio)[117]. In 14th-century Hospitaller Rhodes, the western port »of galleys became known as μανδράκι[118] and resembled a small port housing no more than 20 warships which were constructed in the West, however[119]. This port in turn was replicated by the mandraggio in Malta, when the island's first exclusive military port was built there immediately after the siege of 1565. Surprisingly, there are very few testimonies of μανδράκια in Byzantine texts which may be accounted for its late entry into Greek, borrowed from Romance languages in Italy. In Modern Greek, μανδράκι has lost its specific meaning and is conceived as a small harbour of any kind[120].

In sum, I want to suggest that, considering the etymology of *mandracium*, the topographical situations of the ports in question, and the so-far lack of a term for enclosed ports may warrant an educated guess. A port enclosed by a fortification in contrast to an unsecured port may have been called man-

95 Raban/Oleson, Harbours of Caesarea 95-101. – Oleson et al., Harbours of Caesarea.
96 Fahmy, Muslim Naval Organisation 51.
97 Wawrzinek, Tore zur Welt 175-178.
98 Casson, Ships and Seamanship 366. – Viereck, Die römische Flotte 267. – Wawrzinek, Tore zur Welt 65-68.
99 Latest study on topography and organisation of the port, which in fact contained several smaller ports: Fabre/Goddio, Portus Magnus.
100 Blackman, Ancient Harbours 189.
101 Therefore the recurrent designation as »secret port« (κρυπτὸς λιμήν), e.g. in Aegina: Pausaniae Graeciae Descriptio II 29, 10-11 (Rocha Pereira I 176). – Blackman/Rankov, Shipsheds 191 and 215.
102 Blackman, Ancient Harbours 189-194. – Blackman/Rankov, Shipsheds 211: Arson was committed by the Athenians on the Spartan fleet at Gytheion in 455 BC, by Tarent in Rhodes during the First Cretan war, and King Philipp II of Macedonia took a stab at committing it in Piraeus.
103 Letsios, Seegesetz 108-109.
104 Casson, Ships and Seamanship 365.
105 Fabre/Goddio, Portus Magnus 67. Location mentioned in a decree of Ptolemy VIII: Grenfell/Hunt/Smyly, Tebtunis Papyri I 5, lin. 26 and BGU VIII 1742, lin. 16-7.
106 Lehmann-Hartleben, Die antiken Hafenanlagen 106-107. – Wawrzinek, Tore zur Welt 168-169.
107 Reddé, Mare nostrum 153-158. – Baika, Greek Harbours 435-436.
108 Ménard, L'arsenal. – Bellavitis, L'arsenale di Venezia.
109 Strabonis Amaseni Geographica XIV 5 (Radt IV 56).
110 Eisagoge legis Basilii I imperatoris 40 § 40 (Zepos): ὁ διδάσκων τοὺς βαρβάρους ναῦς κατασκευάζειν κεφαλικῇ τιμωρίᾳ ὑπόκειται. Based on the Synopsis

minor N 15 (Zepos VI 471), we may surmise that the Rhodian sea-law was still in force at the turn of the 13th/14th century, cf. Troianos, Pēges 382. – Makris, Studien 155.
111 Gelichi, Porti nel Mediterraneo 113 fig. 4.
112 Pringle, Byzantine Africa 171.
113 Procopii Caesarensis De bellis III 20 (Haury/Wirth 396). – De aedificiis VI 5,11 (Haury 180). – Carile/Cosentino, Storia della marineria 29 n. 50. – Rougé, Ports et escales 97.
114 Schmiedt, I porti italiani 135. – Canziani/Mannoni/Pittaluga, Dati 163 make a very peculiar statement in relation to this issue: »[…] this discovery has made it possible to locate the medieval military harbour in the area of Mandraccio«.
115 Mauro/Iuliano, Napoli 318-323. In 1278, a *tarsionatus* facility is recorded in a document of King Charles I d'Anjou near Castel Nuovo: significantly, at a date before the loss of Sicily for the *Regno*.
116 Carile/Cosentino, Storia della marineria 80.
117 For the testimonies, see: Bertoni, Mandracchio.
118 Rossi, Hospitallers 322. – Bouras takes this evidence down to the Hellenistic era which is impossible, *pace* Bouras, On the Urbanism 670-673. But it is righteously highlighted in her study that the relevant port area has always been assigned to the navy.
119 Butler, Port of Rhodes 339-340.
120 Kriaras, Lexiko IX 317 s.v. μανδράκι. Early testimonies: Acta monasterii Laurae 74, 18 (Lemerle/Guillou/Svoronos II 24), a praktikon of 1284 on a harbour »of Kalekros« in northern Lemnos as a confine of landed property; and 99, 18.23 (Lemerle/Guillou/Svoronos II 44), 136, 46 (Lemerle/Guillou/Svoronos III 62), and 139, 24.30 (Lemerle/Guillou/Svoronos III 77), repeating it. For the approximate location, consult Kondyli, Lemnos.

dracium / μανδράκιον. However, the term was apparently not widely used in Byzantium. In the case of two connected port areas, it is the one behind the commercial one, being usually smaller and enclosed, to be entered only after passing the commercial port.

Additional to a fortification wall, a port could be screened in respect to the entrance from the open sea. Apparently, naval ports were built with a narrower entrance than commercial ports which could be entered by several ships at the same time. The approximate average width for ports with a minimized entry is about 20 meters[121].

Some ports were closed off towards the sea by a chain, to deter naval attacks on the port and the anchoring ships[122]. Such a port is called λιμὴν κλειστός in the sources[123]. This term is recorded by epigraphy and in literary sources for ancient Miletos (ca. 85 BCE), and by the archaeological record in Aegina, Kerkyra, Thasos, Sicilian Naxos, Eretria, Syracuse, Mitylene, Rhodes, Kos, Piraeus, Cyrenaic Apollonia, Carthage, Massalia and Abdera[124], with high likeliness also Knidos[125]. However, its occurrence has only an indirect relation to the navy, although warships needed specific precautions against enemy attacks from the sea, since commercial ports evenly profited from the installation of a port control. Insofar, a λιμὴν κλειστός did not necessarily point to its function as a naval station, in my point of view.

The Roman and Late Antique navy

To fully comprehend tradition and innovation of the Byzantine navy, the developments since the Principate and Dominate must be considered, especially regarding the sites for the construction of warships, which are closely related to the organisation of the navy[126]. As a matter of fact, our knowledge on Neoria and shipsheds in Antiquity has seen large progress in the last decades[127], but the issue of continuity to and naval logistics in the medieval period is still a big unknown, as was recently stressed by David Blackman[128].

Augustus is regarded as the founder of the Misenian fleet based in Portus Iulius (then Misenum[129]) and the Ravennate fleet in Ravenna[130]. Both together constituted the imperial (i. e., praetorian) central fleet, whose activity radius extended over the entire Mediterranean Sea[131]. Local navies of some *poleis* and provinces continued to exist under their own command; their main task was to guard their respective coasts against piracy. Thanks to the epigraphic record we know of war squadrons of the *poleis* of Nicomedia, Sinope, Cyzicus[132], and Perinthus[133]. The last is the well-attested *classis Perinthia*[134]. Those squadrons vanished only in the course of the 3rd century. Roman provincial fleets were created by the emperors sequentially in the 1st and 2nd centuries with one respective base each. Already Augustus incorporated the remnants of the Ptolemaic navy in the *classis Alexandrina* which persisted to the Arab conquest[135], although during the civil war between Emperor Phocas and the eventual successful pretender Heraclius, there appears to have been no effective flotilla present in Alexandria[136]. Emperor Nero was the founder of the *classis Pontica* which also continued to exist to the 7th century[137] and Emperor Vespasian founded the *classis Syriaca* which was apparently stationed in Seleucia Pieria and later in Tyre or Laodicea or both[138]. Marcus Aurelius created the *classis Mauretanica* in Caesarea Mauretaniae[139] and Commodus the *classis nova Lybica* in Cyrene[140]: in both cases by splitting up Alexandrian squadrons formerly responsible for those areas[141]. The latter two commands vanished already in the 3rd century. Due to Diocletian's reforms affecting the administration of Italy, the central command in Misenum was dissolved. Instead, provincial squadrons were created in Italy, namely the *classis Ravennatium*, also called *classis Venetum*, responsible for the Adriatic Sea[142]; the *classis Comensis* for the Ligurian Gulf, and the *classis Misenatium / Misenatis* for the Tyrrhenian Sea[143] (maybe with a further base also in

121 Wawrzinek, Tore zur Welt 171.
122 Kedar, Prolegomena.
123 Oleson, Technology 148. – Simosi, O ›kleistos‹ polemikos limenas. – Blackman / Rankov, Shipsheds 212-213.
124 Blackman / Rankov, Shipsheds 186-188 with refs. – For some of them see also: Hurst, Exceptions.
125 Blackman / Rankov, Shipsheds 218.
126 General overview provided by: Pitassi, Navies and Pitassi, Roman Warships.
127 An overview of archaeologically testified shipsheds of Antiquity is given by: Blackman, Progress and – restricted to the Greek period – Baika, Greek Harbours.
128 Blackman, Context.
129 Starr, Roman Imperial Navy 11-21; on this port, see: Benini / Lanteri, Il porto romano, and De Rossi, Il porto di Miseno.
130 Starr, Roman Imperial Navy 21-26. – Mauskopf Deliyannis, Ravenna 26-31.
131 Reddé, Mare nostrum 164-171.
132 Kienast, Untersuchungen 105-108. – Reddé, Mare nostrum 254-255.
133 Reddé, Mare nostrum 255-256. – Starr, Roman Imperial Navy 126-127 considers this fleet as being the provincial fleet of Thrace created after its annexation in 46 A.D.

134 Kienast, Untersuchungen 109-110.
135 Kienast, Untersuchungen 82-87. – Reddé, Mare nostrum 605. – Starr, Roman Imperial Navy 109-114.
136 Ioannis episcopi Nicionensis Chronicon CIX 1-3 (Charles 174).
137 Kienast, Untersuchungen 115-117. – Starr, Roman Imperial Navy 125-129.
138 Kienast, Untersuchungen 92-97. – Reddé, Mare nostrum 236-241. – Viereck, Die römische Flotte 256. – Starr, Roman Imperial Navy 114-117.
139 Reddé, Mare nostrum 244-248. – Starr, Roman Imperial Navy 117-120.
140 Reddé, Mare nostrum 249 and 566-567.
141 Kienast, Untersuchungen 103-105.
142 The relation between the *classes Ravennatium* and *Venetum* are not entirely clear; apparently Aquileia served as a naval base, as well; cf. Reddé, Mare nostrum 213-218.
143 Kienast, Untersuchungen 125-129. – de Rossi, Il porto di Miseno 839-845. De Rossi's study gives attention to the fact that the port, but not necessarily the naval command, was still mentioned as operating by Pope Gregory I in one of his letters, written in May 599: Gregorii I papae epistolae IX 145 (Norberg II 696). The pottery finds on the ground suggest a commercial use of the port in Late Antiquity, with a rich viticultural hinterland owned by the papacy since the 6th century as attested by the Liber pontificalis (Duchesne I 182).
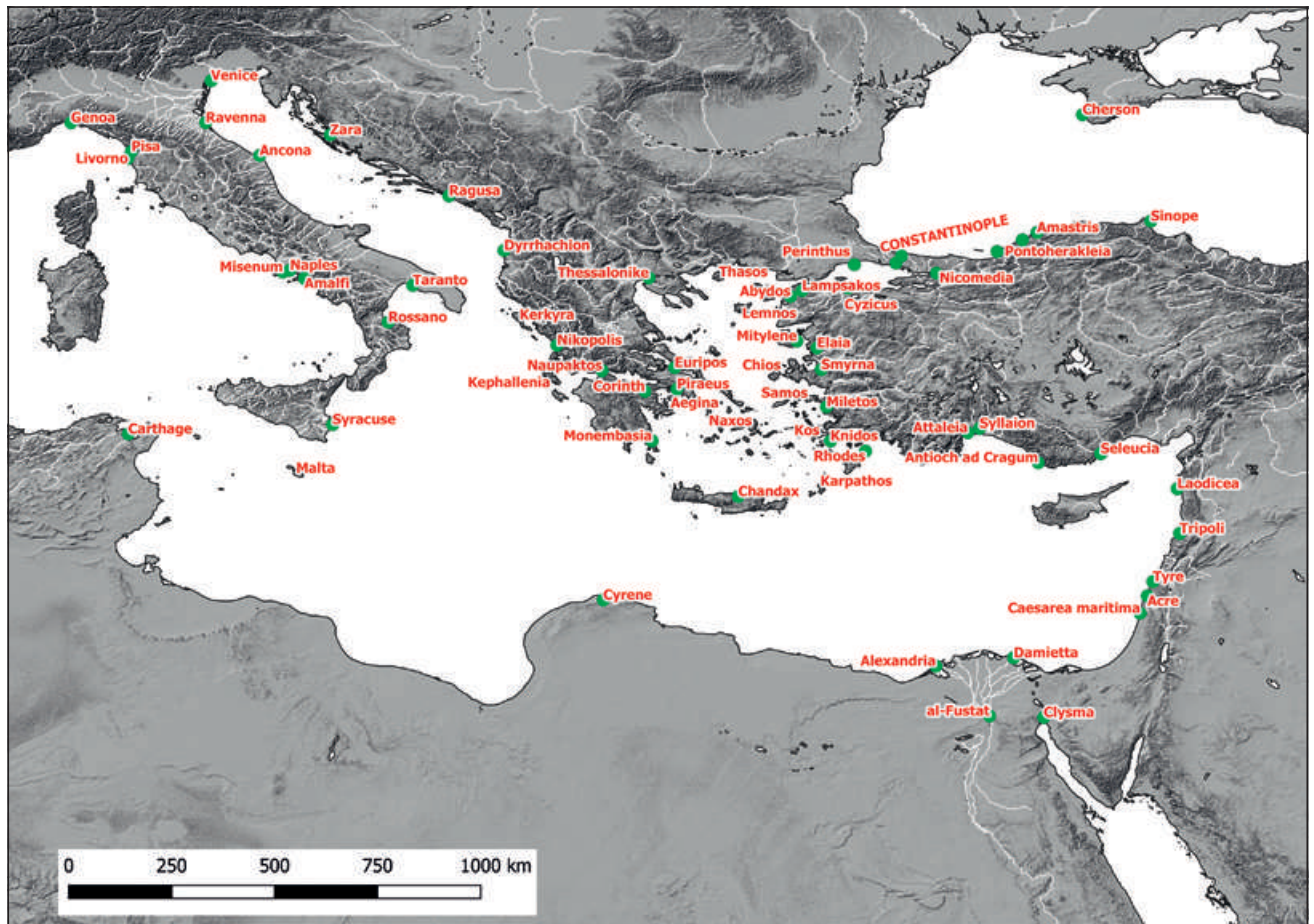
Fig. 1 Localities mentioned in the text. – (J. Preiser-Kapeller, 2020).

Calaris / Cagliari[144]). For similar reasons provincial navies in Cyprus, Caria and Asia came into existence at about the same time[145], restricting the area of activity of the *classis Syriaca*, consequently. Considering this trajectory, it is also not surprising that the later Balkan coasts' share on the Byzantine war fleet's construction can be considered insignificant, as it was already negligible in Roman times.

In sum, during the Principate there was a dichotomy between the central fleet command in Misenum and local fleets which in turn had its effect on a different command structure, and divergent activity areas (and different ship types: quadriremes in the central fleet). In the period of the Dominate, there was no central fleet anymore and all war fleets (except of the ceremonial imperial ships) were maintained by the provinces. This remained the situation till the 7th century[146].

Before turning to the Byzantine navy, it may be enlightening also to consider the evidence of the Arab war fleets in the 7th and 8th centuries, because they had to rely on their Late Antique predecessors in every regard, like the Byzantines. For Umayyad Egypt, *the classis Alexandrina*[147] and a smaller Red Sea squadron in Clysma[148] (of whose Roman origins basically nothing is known[149]) are attested. Because of the exposure of the Alexandrian ports to Byzantine attacks, a further shipyard was established in Babylon / Fustat / al-Rawda / Al-Jazîra at around 700 CE[150]. Only in the 8th/9th centuries, shipyards were also set in operation in Damietta and Rosetta / Rashīd[151]. Regarding the Syro-Palestinian coastline, shipyards of some importance were located in Tyre, Tripoli[152] and Laodicea according to the sources of the Umayyad period[153]. Contrary to Egypt, these shipyards were established anew since 669 CE because they had no Byzantine precursors[154]. In the Abbasid

144 This is based mainly on a heavily emended 6th-century inscription of a dromonarius Gaudiosus, in: Cosentino, Gaudiosus. – Carile / Cosentino, Storia della marineria 201. – See also Reddé, Mare nostrum 207.

145 Kienast, Untersuchungen 130-131.

146 For this esp. Zuckerman, Byzantine Dromon 57-72. I rather follow him, *pace* Carile / Cosentino, Storia della marineria and Pryor / Jeffreys, Age of the δρόμων 7-34. The debate may still be open, but Zuckerman's arguments are more straightforward.

147 Fahmy, Muslim Naval Organisation 27-30.

148 Fahmy, Muslim Naval Organisation 23-27.

149 For the few indications for the Early Byzantine period cf. Christides, Martyrdom of Arethas.

150 Fahmy, Muslim Naval Organisation 35-50.

151 Fahmy, Muslim Naval Organisation 30-35.

152 Theophanis confessoris Chronographia a. a. 6146 (Boor 345. – Mango / Scott 482).

153 Fahmy, Muslim Naval Organisation 51-55.

154 Al-Balādhurī, Kitāb futūḥ al-buldān (al-Munağğid 117-118. – Hitti 179-180) and al-Munağğid 126-128. – Hitti 193-196.

period, Laodicea lost its importance, and the main arsenal was definitely based in Tyre[155]. Acre's port was established only in 878 CE by Ahmad ibn Ṭūlūn and served commercial purposes alone[156], while Tyre's port was extended in the same year (remaining a naval base)[157].

Also, in the Maghreb the Arab conquerors relied on Roman installations and the seafaring local populace. Due to Vandal rule (439-533), Carthage had become a naval centre[158] also being used by the Byzantines thereafter (533-698). After the Arab conquest, due to an almost successful attempt of Byzantine re-conquest, it was immediately replaced by the less exposed Tunis in 699 CE with the establishment of its arsenal in 703[159] in a secure landlocked position[160]. It seems as if Cyrene's/Barqua's military port of the former *classis nova Lybica*[161] was also continued by the Arabs. Of the shipbuilding in Muslim Crete (822/827-961), which presumably centred on Khandaq/Chandax, we have no knowledge at all[162].

The Byzantine navy organisation

When the Byzantine navy under the command of the Καραβισιανῶν came into existence under Constans II in the 660's, its warships were apparently constructed in Constantinople alone[163]. His successors seem to have continued unchanged, as can be seen by the chronicle entries on Justinian II's expedition against Cherson[164]. When the command of the Karabasianoi was dissolved or sent into oblivion by Emperor Leo III, the navy was divided in the so-called central fleet (actually called the imperial one, βασιλικὸν πλόϊμον) and regional commands, indiscriminately called the thematic fleet by scholars regardless of the date they refer to (θεματικὸς στόλος)[165]. The thematic fleet as such came into being only in the mid-9th century when the fiscal and administrative structure of the themes designed in the first decade of the 9th century[166] was expanded onto the maritime sphere. To

this part of the navy Theophanes cont. and Genesios refer verbatim[167] and it comprised vessels from both the naval themes and those ordinary themes which had warships at their disposal. The major difference of the central fleet in comparison to the thematic fleet lied in their command structure. This is made explicitly clear by Leo VI in his *tactica*: while the droungarios of the central fleet gave direct orders to »his« fleet, the thematic fleet (here: θεματικῶν δρομώνων) was commanded by their respective droungarioi (for the naval themes) or tourmarchoi (for the ordinary themes) who were in turn subordinated to the δρουγγάριος τοῦ στόλου or δρουγγάριος τοῦ πλωΐμου (the chief of the central fleet[168]) in a combined operation[169]. In such a concerted command, the δρουγγάριος τοῦ πλωΐμου was usually temporarily appointed δρουγγάριος τῶν πλοΐμων[170]. However, the narrative sources sometimes confuse the two terms due to their phonetic similiarity or hedge around the office by simply calling the commander-in-chief ναύαρχος.

There is the minor problem that the δρουγγάριος τοῦ πλωΐμου is not yet attested in the 8th century[171], and features for the first time in the Taktikon Uspienskij[172] (dated to 842/843 by Oikonomides or – more convincingly – to 812/813 by Živković[173]). Ahrweiler suggested that the office was created by Emperor Michael II in relation to the fights for Crete[174], while Cosentino argues for the 760s[175], but there is no evidence for this and we thus cannot infer whether a command of the central fleet existed in the 8th century whatsoever[176]. Since the 9th century, the command of the central fleet encompassed the whole Propontis, since the Archon of Abydos (i. e., *abydikos*) with his ships was directly submitted to the command of the δρουγγάριος τοῦ πλωΐμου[177].

This twofold divisional organisation was in force from the mid-9th to the end of the 11th century when the thematic fleet as an organisational unit perished and only the central fleet survived[178]. The first μέγας δούξ is attested in 1092 with John Doukas who probably was the supreme commander of the entire navy[179]. It thus seems doubtful that Alexios I

155 Gertwagen, Harbours 113-114. This continued under Fatimid rule, with only Tripoli having still a functioning naval construction site, cf. Bramoullé, Activités navales 261.
156 Al-Muqaddasī, Kitāb Aḥsan (de Goeje 162-163. – Ranking/Azoo 269).
157 Bramoullé, Activités navales 265.
158 Reddé, Mare nostrum 649-652.
159 Fahmy, Muslim Naval Organisation 69-72.
160 For the Fatimid arsenal in Al-Mahdiyya, see: Lev, Fatimid Navy 245-246.
161 Kienast, Untersuchungen 103-105.
162 Fahmy, Muslim Naval Organisation 72-74.
163 Ahrweiler, Byzance et la mer 429.
164 Theophanis confessoris Chronographia a. a. 6203 (Boor 377. – Mango/Scott 527).
165 Ahrweiler, Byzance et la mer 31. In the 10th-century naumachica, the thematic fleet is represented as πλώϊμοι θέματα as in Leonis VI imperatoris Naumachica, cap. 27 (Jeffreys 494) or as coming from the πλευστικά θέματα as in Nicephori Urani Naumachica, cap. 25 (Jeffreys 582).
166 Haldon, Evil Deeds.
167 Theophanis continuati Historia II 13 (Featherstone 84). – Iosephi Genesii Historia II 5 (Lesmüller-Werner/Thurn 26-27).
168 Guilland, Études 213 n. 1; an extensive but somehow out-dated survey in Guilland, Recherches I 535-562. Furthermore, Zacos/Nesbitt, Byzantine Lead Seals II no. 341 with commentary.

169 Leonis VI imperatoris Tactica XIX 26 (Dennis 512).
170 Guilland, Recherches I 552 n. 10.
171 Béhier was wrong in seeing [Tiberios] Apsimaros, called droungarios by Nikêphoros, as the first holder of this office as he merely commanded a part of the Kibyrrhaiote force: Nicephori patriarchae Breviarium, cap. 41 (Mango 98). *Pace* Béhier, La marine 3.
172 Tacticon Uspenskij (Oikonomides, Listes 53, 16).
173 Živković, Uspenskij's Taktikon.
174 Ahrweiler, Byzance et la mer 73-74.
175 Cosentino, Naval Warfare 323.
176 Lounghis, Byzantine War Navy 23-25 and 38, has refuted the existence of a central command from the early 8th to the mid-9th century.
177 Ahrweiler, Fonctionnaires 243.
178 Malamut, Les îles 602. Thematic squadrons are for the last time mentioned during the rule of Emperor Michael IV, at: Ioannis Scylitzae Synopsis historiarum (Thurn 398-399), and Emperor Constantine IX (stratēgos of Kibyrrhaiotōn, Kōnstantinos Kaboullarios) at: Ioannis Scylitzae Synopsis historiarum (Thurn 432) and Michaelis Attaliatae Historia (Tsolakis 16,17-17,21). – In total accord with Kislinger, one may doubt that there was anything left of the navy – neither thematic nor central squadrons – after the 1040's; the later testimonies up to the first half of the 12th century point to a small squadron for the use of the emperor and court only, see: Kislinger, Ruhm 50-52.
179 Revanoglou, Paratērēseis 76.

Fig. 2 View of the city of Monembasia by F. de Witt. – (After Peloponnesus hodie Moreae Regnum Distincte Divisum, in Omnes suas Provincias, Hodiernas atque Veteres, cui et Adiunguntur Insulae Cefalonia, Zante, Cerigo et St. Maura, Amsterdam, c. 1680).

re-established the thematic fleet[180] which was no more in any case during the reign of his successor John II as the sources amply demonstrate. John II is most famous however for his cuts in the navy which were implemented on the advice of the *megas logaristes* John Poutzes in the 1130's (most probably in 1135-1137[181]). This reform, although its impact, aims and scope are hard to grasp based on the little information provided by Nicetas, has recently been interpreted as a package of measures gathering fiscal strength and focusing it on the central fleet only in order to cope with the navies of the Italian maritime republics and the kingdom of Sicily[182]. In any case, the cutbacks postdated[183] the hostilities with Venice (1122-1126)[184] which most probably triggered the reform. Anyway, since then there was only the central fleet left in operation, having squadrons in provincial ports, though. There is no reason to think of provincial warship-building after

that time, as Ahrweiler has righteously stressed[185]. However, mercantile shipbuilding continued in Monemvasia (see **fig. 2**), Rhodes, and Smyrna etc. in and after the 12th century[186].

The Byzantine navy's commands

How did the organization of the navy develop and how did its activity relate to the ports? As is now acknowledged, the stratēgis (sic: no theme) of the Karabisianōn was the supreme naval command created *ex novo* in the 660's and settled in Constantinople[187]. Under its auspices, regional squadrons headed by droungarioi were operating at their coasts, only ordered to leave their waters for greater naval expeditions like the ones designed to deliver Thessaloniki (ca. 680-685)[188] and Carthage (697)[189] from the threat of

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180 This is stated by Malamut, Les îles 604. Beforehand, Guilland had already suggested that Emperor Alexios I abolished the thematic fleet and placing at the head of the central fleet the new office of the μέγας δρουγγάριος τοῦ στόλου (unofficially μέγας δούξ which became the official title only later), cf. Guilland, Études 219 and Guilland, Recherches I 540. Regarding the centralisation, see: Ahrweiler, Byzance et la mer 199. Regarding the evolution of the title of the naval commander-in-chief, see: Böhm, Flota 237-238.

181 Nicetae Choniatae Historia (Dieten 54-55). – Theodori Scutariotae episcopi Cyzicensis Synopsis chronike (Sathas 220-221). – Ahrweiler, Byzance et la mer 230-231. – More convincing and with a modified evaluation of this policy: Lilie, Handel 625-628.

182 Lau, The Naval Reform 120-121. Regarding Sicily, there is clear evidence for a naval effort in John II's late reign (1138-1143) to cope with the Norman navy, see: Nicephori Basilacae Oratio fragmenta in Ioannem Axuchum, cap. 3 (Garzya 118): Τί φῂς ὁ τῶν Σικελῶν ἀρχηγέτης, ὁ διαπλοϊζόμενος κιβδήλοις βουλαῖς καὶ ἀδοκίμοις ἐννοίαις ἐπινηχόμενος; ὁρᾷς τὸ τοῦ βασιλέως προβόλιον, τὴν ἑτοιμασίαν τὰς τριήρεις τοὺς στρατιώτας.

183 Herrin, Realities of Provincial Government 86 n. 144. – Lau, The Naval Reform 117.

184 Devaney, Like an Ember Buried in Ashes.

185 Ahrweiler, Byzance et la mer 436.

186 Ahrweiler, Byzance et la mer 437.

187 Cosentino dates it after the first Arab attack on Constantinople in 654 till 663; but assuming its headquarters in Samos at that early time does not convince in regard to its port and the command's importance, *pace* Cosentino, Constans II 602-603 and Cosentino, La flotte 6. For this, see also: Pryor/Jeffreys, Age of the δρόμων 25. – Zuckerman, Learning from the Enemy 117-121. – Prigent, Adriatique 394.

188 Testimonies of their strategoi Sisinnios (some when in 680-685) and Theophilos (710) are respectively to be found in Miracula Demetrii, mir. II 5 (Lemerle I 230-1) and Liber pontificalis (Duchesne I 390). – Winkelmann, Rang- und Ämterstruktur 96. – Haldon gives the research history on this highly-debated topic with an inclination towards the theory that the Karabisianōn developed from the Quaestura Exercitus: Brubaker/Haldon, Iconoclast Era 725 n. 4. Yet we disagree on the point that the Karabisianōn's purpose was not primarily to staff warships, because its appellation is clear enough, *pace* Brubaker/Haldon, Iconoclast Era 730.

189 Theophanis confessoris Chronographia a. a. 6190 (Boor 370. – Mango/Scott 517). – Nicephori patriarchae Breviarium, cap. 41 (Mango 98): ἅπαντα τὰ ῥωμαϊκὰ ἐξώπλισε πλόϊμα. – Leontsini, Les communications 109-110.

conquest; or (as reported by the spurious letter to Emperor Theophilos) against the Campanian cities Amalfi and Naples in order to force their alignment with the empire against the Beneventine Lombards (in ca. 705-713 with 120 warships)[190]. After the Karabisinioi's dissolution (in ca. 719[191] or somewhat later[192]), the regional commands continued to exist as before, but, due to having more autonomy now, they feature much more often in the sources because they received orders directly from the emperor and conducted missions in their own right[193]. Only in the Propontis, the central fleet's commander had been given full-blown authority also in the time thereafter. At that crucial time (ca. 720's-730's) there were no naval forces left in the central Mediterranean[194].

It has become ubiquitous to differentiate between naval themes and ordinary (land) themes. Yet this dichotomy has been overemphasized in scholarship, albeit some themes were more inclined to conduct naval operations, because only a few of the commands had naval forces at their disposal. Therefore, we may differentiate commands whose

main power and capabilities rested on naval forces (who were commanded by the main commander, the stratēgos) from those which – due to having only a few warships – delegated their operation to a subaltern of the stratēgos.

The commands of the first category (we know of due to written sources and seals) are the following:

1) Kibyrrhaioton: Established as a sub-command of the Karabisianoi before 697[195] (that year constitutes the first unambiguous mention[196], but maybe even earlier than 668, in the aftermath of the first Arab siege[197]), becoming autonomous before 732/733 when it features as a stratēgis[198] with its own administrative apparatus from at least 739/740[199]. Its headquarters were located in Syllaion and Attaleia (see **fig. 4**), but it also encompassed the major port of Rhodes[200]. Further naval bases were in Karpathos and in Antioch ad Cragum[201]. Due to its name, a further base in Kibyra Minor may be assumed, as well[202]. For a certain time, Seleucia ad Calycadmum may also have been a naval base[203].

190 Epistula ad Theophilum imperatorem, cap. 11 (Munitiz 163). This force was supposedly led by the future Emperor Leo III, who according to Theophanes and Georgios monachos became strategos of the Anatolikon under Anastasios II and had possibly got this post due to his success in the naval operation. A possible sequence of the events is presented by Hendy, Studies 668-669.
191 Pryor/Jeffreys, Age of the δρόμων 32. – Ahrweiler, Byzance et la mer 50-51. Zuckerman rejects their dissolution at that time (based on dubious seals' dates), cf. Zuckerman, Learning from the Enemy 123-124.
192 The seals are listed in: Wassiliou-Seibt, Magister Militum to Strategos 795 n. 41.
193 Zuckerman proposed a different solution: according to him, the Karabisianoi covered the central Mediterranean, while the Kibyrrhaioton were responsible for the eastern seas, which in turn creates the problem that they are both never mentioned simultaneously although having much in common, see: Zuckerman, Learning from the Enemy 121-124. Problem covered also by Prigent, Adriatique 396-397.
194 Prigent, Adriatique 396.

195 Ahrweiler, Byzance et la mer 50-51. For its testified office holders, see: Savvides, Secular Prosopography.
196 Theophanis confessoris Chronographia a. a. 6190 (Boor 370. – Mango/Scott 517).
197 Ioannis Zonarae Epitome historiarum XIV 20, 18 (Pinder III 224). For the siege, see: Jankowiak, First Arab Siege.
198 Theophanis confessoris Chronographia a. a. 6224 (Boor 410. – Mango/Scott 568). Yet, the name Manes is not pejorative but a common and well-attested name in the Black Sea area of indigenous Phrygian origin, which, however, invited Theophanes to a play on words, *pace* Brandes, Phantomnamen 97-100. See, e. g.: Avram, Contribution à la prosopographie 289.
199 Winkelmann, Rang- und Ämterstruktur 96-99.
200 Constantini Porphyrogeniti imperatoris De thematibus, cap. I 14 (Pertusi 79).
201 Constantini Porphyrogeniti imperatoris De ceremoniis II 45 (Flusin/Zuckerman 319.71).
202 Constantini Porphyrogeniti imperatoris De thematibus, cap. I 14 (Pertusi 79). – Eickhoff, Seekrieg 83.
203 PmbZ 6772 (8th c.).

The droungariate of Kos is only known from seals[204] and seems to have been an ephemeral 9th-century sub-command of the Kibyrrhaiotōn[205].

2) »Dodecanese« (commanded by the δρουγγάριος τοῦ κόλπου): The designated area of the »droungariate of the gulf« is debated[206]. However, some indications point to the area of today's Cycladic islands, i.e., the South Aegean Sea, because its short-lived ephemeral appearance in the sources might be explained by its substitution by another command. The »droungariate of the gulf« was founded around 687. In the vernacular, this very area was called Dodecanese at that time, and as such it also features in the sources: for 780/781 in Theophanēs[207], and the first time under this name officially in the Taktikon Uspienskij (812/813, s. above)[208]. This parallel designation is also found on the seals of the *basilika kommerkia*[209]. The command disappears in the first half of the 10th century, having been substituted by either the theme of the Cyclades or the one of Samos[210].

3) Kephallēnia/Kephalōnia: Established in the aftermath of the loss of Ravenna and new challenges in the Adriatic Sea in ca. 765/770[211], the command is first mentioned in 809[212]. It also encompassed the port of Kerkyra[213] which may also have been its headquarters at least in the 10th century[214], when Kerkyra had become an archbishopric while Kephallēnia was downgraded to a suffragan bishopric of Corinth, thereby inversing the relation of the 8th century[215].

4) Aigaion pelagos: Created in around 687[216], its area of activities encompassed only the northern part of what is now regarded as the Aegean Sea. Its droungarios [hic: ἄρχων] Isaakios serving under Constantine V (741-775) had been the father of Theophanēs Homologetēs[217]. Still being a droungariate in 812/813[218], its elevation from a droungariate to a theme was maybe caused by the loss of Crete[219]. According to the Vita SS Davidis, Symeonis et Georgii the strategos' seat has been Mitylene on Lesbos, where also one anchoring dromon is referred to in the

204 Nesbitt/Oikonomides, Catalogue II 110-111. – Schneider, Samos 141.
205 Malamut, Les îles 303-304.
206 Bury and later Ahrweiler and Malamut identified Kolpos with the Propontis: Ahrweiler, Byzance et la mer 75 and 79-81. – Malamut, Les îles 301-305. Hild and Hellenkemper equated the Kolpos with the Kolpos (Bay) of Attaleia which was also postulated by Treadgold: Treadgold, Notes 278, followed by Hild/Hellenkemper, Lykien 300. Haldon is reluctant to take a stance, referring to the problem's complexity, see: Brubaker/Haldon, Iconoclast Era 740 and 758 n. 120. At the moment, this conundrum cannot be solved.
207 Theophanis confessoris Chronographia a. a. 6273 (Boor 454. – Mango/Scott 627). – Malamut, Les îles 301-305. – Ahrweiler, Byzance et la mer 73-75 and 80. – Brubaker/Haldon, Iconoclast Era 739.
208 Živković, Uspenskij's Taktikon 84-85. – Tacticon Uspenskij (Oikonomides, Listes 53, 19).
209 Malamut, Les îles 305. – Ragia, Apothekai of the Balkans 99-103.
210 Ahrweiler, Byzance et la mer 108. – Malamut, Les îles 311.
211 Kislinger, Dyrrhachion 331. – Kolias, Kriegsmarine 134. – Malamut, Les îles 307-309. – Tsatsoulis, Some Remarks 159-165. – Oikonomidès, Constantin VII Porphyrogénète 118-119. – Brubaker/Haldon, Iconoclast Era 757. Last study, followed here: Prigent, Adriatique 399.

212 Einhardi Annales a. a. 810 (Pertz 197): »Paulus, Cefalaniae praefectus«.
213 Constantini Porphyrogeniti imperatoris De thematibus, cap. II 7 (Pertusi 92).
214 Assumed by both Malamut, Les îles 309 and Gasteratos, To thema Kephallēnias 516. Tsatsoulis assumes that the strategos settled in Kephallēnia but travelled often to Kerkyra: Tsatsoulis, Some Remarks 155 and 162-163. Oikonomides made out the case for double headquarters, cf. Nesbitt/Oikonomides, Catalogue II 1-2. The main port of Kephallēnia has been Samos which does not feature in the sources, though. Leontsini's attempt to approach the matter by churches' remains in the Ionian islands does not bear definite fruit, neither: Leontsini, Ionian Islands 528.
215 Notitiae episcopatuum ecclesiae Constantinopolitanae, not. 7 and 8 (Darrouzès 274. 282 resp. 294).
216 Malamut, Les îles 304-305. – Ahrweiler, Byzance et la mer 80-81. For its fiscal apparatus and the righteous description of the confines of the unit, see: Ragia, Apothekai of the Balkans 103-105.
217 Vita Theophanis confessoris, cap. 1 (Krumbacher 389).
218 Tacticon Uspenskij (Oikonomides, Listes 53, 18). – Živković, Uspenskij's Taktikon 65.
219 Pryor/Jeffreys, Age of the δρόμων 47.

vita[220]. There is no agreement on the date of the Life's compilation; it could resemble the situation of the second half of the 9th century or the 11th century. At any rate, it is very unlikely to locate the theme's headquarters in Chios[221], which was part of the theme, though, with a subaltern archōn on its own[222].

5) Theme of Samos: Apparently created in the aftermath of the loss of Crete in the 850's-880's[223], the first stratēgos is mentioned for the year 893[224]. Contrary to its appellation, its headquarters were not located in Samos, but Smyrna[225]. Its predecessors seem to have been the stratēgiai of the Ploizomenoi[226], the latter one, in turn, might have been an ephemeral remnant of the former command of the Karabisianoi according to its name[227].

6) Theme of Cyclades: A new theme created in the 950's-970's[228].

7) Theme of Chios: Established between 971 and 1026/1028, when it is mentioned for the first time[229], it may be considered as an ephemeral naval command[230].

8) Theme of Kerkyra: Because it was to be established at the turn of the 10th/11th century (like Chios)[231], the stratēgos Michaēl Chersonitis who met Liudprand on the island in 968 most probably was the one of Kephallēnia[232].

9) There were further naval commands we virtually now nothing of, but only have seals at our disposal. Apparently, Malta may have had its own squadrons in the 7th/8th century[233]. The evidence regarding Sardinia[234] could rather point to land than to naval forces[235].

In contrast to the so-called »naval commands« (10th-century nomenclature: πλοϊμοθέματα[236] which in turn have the

θεματατικὰ πλόϊμα[237]) some of the ordinary (land) themes did also have warships at their disposal which were commanded by a subaltern of the respective stratēgos, in most cases called tourmarchēs, in a few instances known as katepanō (i. e., Paphlagonia, Mardaïtes of the East, probably Ragusa although the latter one most probably was not a subaltern). Those commands were the following:

1) Hellas: The stratēgis of Hellas was established at the end of the 7th century and always possessed naval forces[238] headed by its tourmarchēs as we know from the revolt of Kosmas in 728 (office held by Agallianos)[239]. It also encompassed the islands of Aegina, Euboea, and those Cycladic islets close to the mainland[240] and its headquarters were relocated several times for strategic reasons[241]. It provided warships in the expedition of 911[242].

2) Sicily: Established at the end of the 7th century (in ca. 692-700)[243], its naval forces were led by a tourmarchēs[244]. Its most famous office holder was Euphēmios in ca. 826 who failed in his attempt to usurp the imperial throne[245]. Until 878 the main Byzantine port of the island had been Syracuse where the *Siculus classis* was stationed[246].

3) Peloponnese: Established in the 800's from reconquered territory adjacent to Hellas, its headquarters were based in Corinth[247], but there is good reason to assume that its naval forces were stationed in Monemvasia under the command of a tourmarchēs. It provided warships to the expedition of 949[248].

4) Crete: Being part of Hellas before[249], it maybe became a command in its own right, led by an archōn since 767[250], and was elevated to a theme under Emperor Nikephoros I

220 Vita Davidis, Symeonis et Georgii Mytilenae, caps. 32 and 37 (van den Gheyn 253 and 258. – Abrahamse/Domingo-Forasté 232 and 240).
221 Postulated by Eickhoff, Seekrieg 84.
222 Ahrweiler, Byzance et la mer 108.
223 Philothei protospathari Cleterologion (Oikonomidès, Listes 101, 29). – Pryor/Jeffreys, Age of the δρόμων 47. – Malamut, Les îles 312-313.
224 Ioannis Scylitzae Synopsis historiarum (Thurn 175).
225 Constantini Porphyrogeniti imperatoris De thematibus, cap. I 16 (Pertusi 82).
226 Constantini Porphyrogeniti imperatoris De thematibus, cap. I 16 (Pertusi 81). – Malamut, Les îles 304. – Carile/Cosentino, Storia della marineria 262.
227 Carile/Cosentino, Storia della marineria 262.
228 Tacticon Scorialensis (Oikonomidès, Listes 267, 31). – Malamut, Les îles 313. – Nesbitt/Oikonomides, Catalogue II 111.
229 Ioannis Scylitzae Synopsis historiarum (Thurn 373). – Felix, Byzanz 202 n. 43.
230 Malamut, Les îles 316. – Nesbitt/Oikonomides, Catalogue II 111.
231 Malamut, Les îles 316. – Ahrweiler, Byzance et la mer 51 n. 5. – Nesbitt/Oikonomides, Catalogue II 16-7.
232 Liudprandi episcopi Cremonensis Relatio de legatione Constantinopolitana, cap. 64 (Chiesa 217).
233 PmbZ 5358 (7th/8th c.). – Ahrweiler, Byzance et la mer 87.
234 Spanu, La Sardegna 92-5.
235 Leontsini argues for naval forces held by Sardinia in the 2nd half of the 7th century, which suppressed Mezezios' rebellion in 668, although there is no mention of ships referred to, at: Liber pontificalis (Duchesne I 346), see: Leontsini, Les communications 115.
236 Constantini Porphyrogeniti imperatoris De ceremoniis II 45 (Flusin/Zuckerman 323.123). For that expedition only three of them were participating: Aigaion pelagos, Samos, and Kibyrrhaioton.
237 Constantini Porphyrogeniti imperatoris De ceremoniis II 44 (Flusin/Zuckerman 315.1). – The same emperor promulgated a Novel at around 947/948, that refers to the naval themes of Aigaion pelagos, Samos and Kibyrrhaioton as receiving the same privileged treatment as the land themes whereas the other

naval themes took no benefit from the Novel: Constantini VII imperatoris Nov. 3 cap. 1 (Svoronos 118). Dölger/Müller, Regesten 673.
238 Malamut, Les îles 314. For this creation, see: Brubaker/Haldon, Iconoclast Era 733.
239 Theophanis confessoris Chronographia a. a. 6218 (Boor 405. – Mango/Scott 560). Zuckerman postulates Kosmas being part of the Karabisianoi, but his post as *tourmarchēs* renders this solution unlikely, although a projection from 9th-century realities on the part of Theophanēs cannot entirely be ruled out, *pace* Zuckerman, Learning from the Enemy 124. Instead, I consider it is much more likely that the tourmarchēs led Hellas' troops into battle, because he was the one familiar with the main instrument of the revolt targeting the capital: the naval forces.
240 Constantini Porphyrogeniti imperatoris De thematibus, cap. II 5 (Pertusi 90).
241 Nesbitt/Oikonomides, Catalogue II 22-3.
242 Constantini Porphyrogeniti imperatoris De ceremoniis II 44 (Flusin/Zuckerman 299).
243 Brubaker/Haldon, Iconoclast Era 730-731.
244 Nichanian/Prigent, Les stratèges 97-99.
245 Theophanis continuati Historia II 27 (Featherstone 120). – Main study: Prigent, Euphèmios. – For Sicily's deposition as a cradle for rebellion, see: Kislinger, Elpidios 199.
246 Leonis III papae epistolae X 6 (Hampe 96) sent to Charlemagne in the reign of Emperor Michael I on 26th Aug 812.
247 Makrypoulias, Navy 153. – Nesbitt/Oikonomides, Catalogue 62. – Brubaker/Haldon, Iconoclast Era 757, n. 112, arguing for a creation in around 784-788. First mention of the theme (812/13): Tacticon Uspenskij (Oikonomides, Listes 49, 11).
248 Constantini Porphyrogeniti imperatoris De ceremoniis II 45 (Flusin/Zuckerman 321.74-5).
249 Tsougarakis, Byzantine Crete 23-24.
250 Tsougarakis, Byzantine Crete 40.

Fig. 5 View of the city of Dyrrha-chion (Durrës) by Simon Pinargenti from 1573. – (After Isole, che son da Venetia nella Dalmatia, et per tutto l'arcipelago, fino a Costantinopoli, con le loro Fortezze, e con le terre più notabili di Dalmatia ; nuovamente poste in disegno a beneficio de gli studiosi de Geografia. In Venegia 1573, no. 6).

(802-811) or Michael I (811-813)[251], but it was lost for the empire in fights between 822/827 and the 850's[252]. Although it seems likely that it possessed warships, we dispose of no information. After its reconquest in 961, Crete immediately became a land theme again[253].

5) Nikopolis: When being raised from an *archontia* to a theme in the second half of the 9th century, its headquarters were relocated from Nikopolis to Naupaktos at the same time[254].

6) Dyrrhachion (see **fig. 5**): Before being elevated to a theme in the 800's[255] it had been led by an archōn (of Bagenetia)[256]. It is doubtful that it possessed warships on its own, instead, central fleet squadrons were sometimes operating from Dyrrhachion[257].

7) Dalmatia: Before being elevated to a theme in the 870's[258] it had been led by an archōn[259]. Although being a coastal territory, there is no evidence for warships maintained by the theme.

8) The Theme of Paphlagonia: Established in the 800's[260], its naval forces were led by a katepanō according to the written sources[261] and seals[262] ever since till the 11th century and they were most likely stationed in Amastris (see **fig. 3**)[263]. However, Sinōpē and Tios may have been relay stations. The fleet's area of operation encompassed the whole Black Sea. When the future Emperor Alexios I went to Pontoherakleia in ca. 1075 the local dynatos named Maurex was apparently also in possession of naval forces[264].

As said, the thematic fleet stemmed from both naval themes and those ordinary themes that disposed of squadrons. Its combined forces roughly matched the size of the central fleet, as can be seen by the reports for the expeditions of Michael II against Crete (headed by Krateros in ca. 827-829; 70 thematic warships)[265], Leo VI against the Syrian coast (headed by Himērios in 910; 67 thematic to 100 imperial warships)[266],

251 Tacticon Uspenskij (Oikonomides, Listes 49, 18). – Brubaker/Haldon, Iconoclast Era 761-762 n. 132.
252 Christides, Conquest of Crete.
253 Nesbitt/Oikonomides, Catalogue 94. – Malamut, Les Insulaires 65, and Cosentino, Naval Warfare 325, suggest that it had been a naval theme nonwithstanding the fact that no fleet is ever mentioned in relation to the theme of Crete.
254 Nesbitt/Oikonomides, Catalogue II 9-10.
255 Tacticon Uspenskij (Oikonomides, Listes 49, 17). – Kislinger, Dyrrhachion 313. – Živković, Uspenskij's Taktikon 84.
256 Kislinger, Dyrrhachion 337. – Ahrweiler, Byzance et la mer 87.
257 Constantini Porphyrogeniti imperatoris De ceremoniis II 45 (Flusin/Zuckerman 317-319). – Ioannis Scylitzae Synopsis historiarum (Thurn 342-343). – Kislinger, Dyrrhachion 351.
258 Kislinger, Dyrrhachion 313. – Brubaker/Haldon, Iconoclast Era 761. – Prigent, Adriatique 412-414.
259 Kislinger, Dyrrhachion 341-343.
260 Nesbitt/Oikonomides, Catalogue IV 25. – Brubaker/Haldon, Iconoclast Era 758. First mention (812/813): Tacticon Uspenskij (Oikonomides, Listes 49, 7).
261 Theophanis continuati Historia III 28 (Featherstone 176). – Constantini Porphyrogeniti imperatoris De administrando imperio, cap. 42 (Moravscik/Jenkins 182). – Philothei protospathari Cleterologion (Oikonomides, Listes 231, 25). – Ahrweiler, Byzance et la mer 110-111. It should be remarked, though, that the naval forces referred to were maybe part of the central fleet and in that case not belonging to the theme of Paphlagonia.
262 Zacos/Nesbitt, Byzantine Lead Seals II nos. 348 (a certain katepanō commanding the naval forces of both Boukellariōn and Paphlagonia in the first half of the 10th c.). 798 (second half 10th c.). 1060 (first half 11th c.).
263 Oikonomidès, Listes 349. – Belke, Paphlagonien 162. This infers from the imperial 8th/9th-century fortifications and the elevation to an autocephalous archbishopric in ca. 800: Notitiae episcopatuum ecclesiae Constantinopolitanae, not. 3, 329 and 4, 76 (Darrouzès 237 and 251). – Crow/Hill, Amastris 251-265.
264 Nicephori Bryennii Historia II 26 (Gautier 197-9).
265 Iosephi Genesii Historia II 5 (Lesmüller-Werner/Thurn 26-7). – Theophanis continuati Historia II 25 (Featherstone 116). – Ioannis Scylitzae Synopsis historiarum (Thurn 45). – Makrypoulias, Navy 157. – Tsougarakis, Byzantine Crete 43.
266 Constantini Porphyrogeniti imperatoris De ceremoniis II 44 (Flusin/Zuckerman 297-299). – Skopelites, Οι ναυτικές δυναμείς 109, surmises that Leo expanded the navy significantly in the aftermath of the sack of Thessalonica in 904.

and Constantine VII against Crete (headed by Kōnstantinos Gongylēs in 949; 55 thematic to 82 imperial warships)[267]. According to the numbers transmitted for the expedition of Himerios in 910, the central fleet had a total strength of 12 000 men without reserves; the Kibyrrhaiotōn 5600; Samos 4000; and Aigaion Pelagos 3000[268]. Although these numbers were certainly temporarily increased due to the planned offensive, the ratio between them indicates the approximate strength of the naval forces (central fleet matches thematic navy almost 1:1).

Due to the naval forces' almost equal size, it happened quite often during civil wars that the navies of the central fleet met the thematic fleets in battle. That occurred in 821 when Emperor Michael II blocked the Hellespont against the usurper Thomas with the central fleet[269]. And again in 977, when Michael Kourtikios, stratēgos of Kibyrrhaiotōn, while advancing to the Hellespont was defeated off the coast of Phokaia by the droungarios of the central fleet Theodoros Karantēnos[270].

Regarding other recorded major naval operations, we lack information on the origin of the warships. On 22 May 853, 85 Byzantine ships (*shalandiyah*) attacked Damietta according to Arabic sources, led by the δρουγγάριος τοῦ πλωΐμου Niketas Ooryphas[271]. In early summer 858 (sometime between April to August), a naval encounter between Arab and Byzantine fleets occurred in the Ionian Sea, in which 40 *chelandia* commanded by »the Cretan« took part. He is to be identified with John, the Byzantine stratēgos of Peloponnese[272].

When larger fleets were assembled in a combined fleet – then usually under the supreme command of the droungarios of the central fleet – the overhauling and outfitting of the ships were overseen by the *protonotarios*[273] of that very theme in which the assembly was taking place as is attested by by documents of the 10th century[274].

Operational sizes and internal command structure

While the army was organised in banda and tourmai, the mid-Byzantine navy used the standard detachment of a dro-

mon, called οὐσία, numbering 108-110 men[275], and led by a kentarchos. Larger dromones could be manned by an augmented οὐσία, called the Pamphylian οὐσία (120-160 men), or even two ousiai[276]. The crew consisted of soldiers, and oaring the ship was their main occupation[277].

The extraordinary large naval operations recorded in the written sources may distort our view of the navy's everyday activities. Actually, the naval forces usually had a less imposing impact due to their operation in small units. To imagine the size of permanent thematic squadrons and the effort to maintain them, we need to reconsider the evidence.

At the turn of the year 885/886, Pope Stephen V requested Emperor Basileios I to send a single patrol chelandion off the papal coast in a regular manner from April to September to ward off Saracen pirates[278]. This demand was fulfilled. Far off from the theatre of war, a single warship may have been considered sufficient. Under Emperor John III six ships were sent against the Megale Vlachia (i. e. Thessaly) in 1239[279].

According to the 10th-century *tactica* of Leo VI, the smallest operational unit of warships in a regular mission was to be three to five ships[280] which were under the command of a κόμης[281], in other sources this office is sometimes circumscribed as ἀρχηγός. However, komētes can be found in every military unit, also in inland themes without any naval forces, where they appear as commanders of a bandon[282]. Consequently, not every komēs can be co-opted for the navy[283].

A somewhat different pattern emerges when considering the lead seals. Only the komētes of the central fleet are readily identifiable. According to a 9th-century lead seal, Andreas had been komēs of the 3rd bandōn of the central fleet[284]. A similar testimony belongs to Michaēl in the second half of the 9th century[285]. Further commands of the central fleet were stationed in Abydos and Hierōn. Although komētes controlled the sea traffic at either base since the 6th century, they were incorporated into the naval command seemingly only during the 8th century. For Abydos, a certain Nikētas is recorded at the turn of the 7th/8th century[286], Theodōtos in the first half of the 8th century[287], Paulos in the first half of the 8th century[288], Basileios in the first half of the 8th century[289], Kōnstantinos in the 8th century[290]. For Hierōn, Baanēs in the first half of the 8th century[291], Sergios in the second half of the

267 Constantini Porphyrogeniti imperatoris De ceremoniis II 45 (Flusin/Zuckerman 317-319).
268 Constantini Porphyrogeniti imperatoris De ceremoniis II 44 (Flusin/Zuckerman 295).
269 Iosephi Genesii Historia II 5 (Lesmüller-Werner/Thurn 26-27).
270 Ioannis Scylitzae Synopsis historiarum (Thurn 319-322).
271 Vasiliev/Canard, Byzance et les Arabes I 212-218. Aṭ-Tabarī, Taʼrīḫ al-rusul wa l-mulūk a. a. 238 (Yar-Shater XXXIV 124-127).
272 Vasiliev/Canard, Byzance et les Arabes I 219-220.
273 This office came into existence in the 810's, see Brubaker/Haldon, Iconoclast Era 764.
274 Ahrweiler, Byzance et la mer 424.
275 Haldon, Theory and Practice 281.
276 Cosentino, Naval Warfare 327-328.
277 Cosentino, Naval Warfare 328.
278 Stephani V papae epistola ad Basilium I imperatorem (Caspar/Laehr 374).
279 Georgii Acropolitae Historia 38.22-23 (Macrides 207).

280 Leonis VI imperatoris Tactica XIX 25 (Dennis 512). – Pryor/Jeffreys, Age of the δρόμων 268-269.
281 Basilii patricii Naumachica, cap. 4 (Jeffreys 538).
282 Kühn, Die byzantinische Armee 51.
283 In 812/813 they are specified as κόμητες τοῦ πλοΐμου in Tacticon Uspenskij (Oikonomides, Listes 63, 26). – In the 10th c., they are mentioned in De ceremoniis I 47 (Dagron/Flusin II 5). Béhier, La marine 4-5.
284 Laurent, Orghidan, no. 178. – PmbZ 417.
285 Zacos/Nesbitt, Byzantine Lead Seals II, no. 853. – PmbZ 5128.
286 Zacos/Veglery, Byzantine Lead Seals, no. 3039. – PmbZ 5326.
287 Zacos/Veglery, Byzantine Lead Seals, no. 2480A. – PmbZ 7926.
288 Zacos/Veglery, Byzantine Lead Seals, no. 3160. – PmbZ 5819.
289 Nesbitt/Oikonomides, Catalogue III no. 40.4. – PmbZ 852.
290 Nesbitt/Oikonomides, Catalogue III no. 40.6. = Zacos/Veglery, Byzantine Lead Seals, no. 1803. – PmbZ 3808.
291 Nesbitt/Oikonomides, Catalogue III no. 81.1. – Zacos/Veglery, Byzantine Lead Seals, no. 3212 (Hieron not preserved, but same official). – PmbZ 714.

Fig. 6 View of the city of Euripos (Negroponte, Chalkida) by Giovanni Francesco Camocio. – (Isole famose porti: fortezze, e terre maritime sottoposte alla Ser.ma Sig.ria di Venetia, ad altri Principi Christiani, et al Sig.or Turco nouamĕnte poste in luce. Venetia [1572]; Rare Book Division, The New York Public Library. »Isole famose porti« New York Public Library Digital Collections).

8th century[292], Kosmas in the 2nd quarter of the 9th century[293]. For both Abydos and Hierōn at the same time, Geōrgios in the 8th century[294], and Michaēl in the later 9th century[295]. Testimonies dry out during the ninth century, for reasons unknown, although the central fleet continued to operate from Abydos.

Apparently, although there is much more evidence of the komētes of the central fleet, the provincial fleets must also have had them. The sigillographic evidence indicates that the office went out of use in the course of the 10th century.

Yet, this Byzantine nomenclature spread to the West and was adapted accordingly. In the 12th-century Norman navy, each ship was commanded by two *comes galearum*[296]. Also in 16th-century Venice, warship commanders were called *sopracomiti*[297].

There is another office that has been co-opted for the navy. Ahrweiler suggested taking every testimony for an *archon* (ἄρχων) in a coastal city (like Smyrna[298]) or an island – which in turn very often are coined as *abydikos* probably related to the paragon of the archon of Abydos (as Ahrweiler suggested) or, alternatively, to the *paraphylax* of Abydos[299] – to postulate naval squadrons in many ports of the empire[300]. However, the assumption that every *archōn* of a coastal city

disposed of warships under his command can be doubted, considering that his main tasks were rather overseeing taxation, especially collecting custom duties, controlling maritime traffic, ensuring order and performing general police functions, and that he was subordinate to the λογοθέσιον τοῦ γενικοῦ (therefore not organised within the military administration). Furthermore, archontes are found in many inland places[301]. The same can be said of the *paraphylax,* who is attested not only in port cities but also in inland cities such as Nicaea. Taken together *archontes* and *paraphylakes* previously considered to be in command of warships, may have had no connection at all with the navy.

Conclusion

The etymological survey undertaken forms the essential basis for an investigation of the Byzantine navy. Although the Byzantine written sources pay little attention to the operation and maintenance of the navy, surprisingly even in the naval *tactica*, comparative reflections on the Roman and Arab navies give indications of the Byzantine one. As a matter of fact, the Italian and Arab fleets were strongly

292 Nesbitt/Oikonomides, Catalogue III no. 81.3. = Zacos/Veglery, Byzantine Lead Seals, no. 2358. – PmbZ 6633.
293 Nesbitt/Oikonomides, Catalogue III no. 81.2. = Zacos/Veglery, Byzantine Lead Seals, no. 2077. – Lilie et al., Prosopographie der mittelbyzantinischen Zeit, nos. 4133 and 4144.
294 Zacos/Veglery, Byzantine Lead Seals, no. 1333. – PmbZ 2150.
295 Wassiliou/Seibt, Die byzantinischen Bleisiegel II no. 140. – PmbZ 25130.
296 Stanton, Norman Naval Operations 264-265.
297 Romano, Economic Aspects of the Construction of Warships 67.

298 Cheynet, La place de Smyrne 92. – Ahrweiler, Fonctionnaires 239.
299 Abydikoi are testified at different times in Thessalonica, Euripos, Attaleia, Amisos and Corinth and the office vanished during the 11th century, cf. Ahrweiler, Fonctionnaires 245-246 and Zacos/Veglery, Byzantine Lead Seals I no. 2173.
300 Ahrweiler, Byzance et la mer 54-61.
301 Ahrweiler's point of view has already been rejected by Oikonomides, Listes 342-343 n. 317.

influenced by the Byzantine navy until the 11th century, so that a comprehensive view can broaden our perspective on the functioning of the Byzantine navy. As it turned out, security aspects were of central importance for the ports of the navy, and that produced specific characteristics. »Closed ports« have to be differentiated in ports blocked seawards by a chain, and ports enclosed landwards by a wall. For military ports, both features were combined, this port type being tentatively called λιμὴν κλειστός in Greek, while derivatives of mandracium prevailed in Romance languages and were adopted in Greek only in the Late Middle Ages. Consequently, it is the design of a port that influences the appellation rather than the actual use by commercial ships or the navy.

Based on a survey in the sources, a tentative list and interpretation of the naval bases in the Byzantine empire can be proposed. With the creation of the central command of the Karabisianoi and the high esteem the command received in the administrative apparatus at the turn of the 7th/8th century, a naval network for extensive fleet operations evolved. Yet, previous installations and ports determined the pattern, with areas with a long tradition of high-quality shipbuilding, regardless of the fact that no imperial fleet existed anymore in Late Antiquity.

Due to the regionalisation of the commands during the 8th century, new minor naval bases developed and consequently surface in the sources. Every naval droungariate sustained and maintained its flotilla in at least one naval base in its area of control. Consequently, the creation and development of the naval themes and those themes with a naval force, indicate a shift to the particularisation of naval power. This process strengthened the military capabilities of the periphery at the expense of the central fleet. Since the 9th century at the latest, Taranto, Rossano, Ragusa, Kerkyra, Naupaktos, Monemvasia, Euripos (see **fig. 6**), Moudros (Lemnos), Antioch ad Cragum, Karpathos, Amastris and maybe Samos and Cherson can be accounted for being minor naval bases serving regional commands; in the later 10th century supplemented by Chios. Additionally, at certain times the central fleet used Abydos and Dyrrhachion as subordinated naval bases. The imperial authority was safeguarded against attempts after the grab for power on the part of the navy by a deliberate power balance between the central fleet and the combined thematic fleets.

As the sources reveal, Byzantine warships were constructed in specialised ports until the 12th century[302]. In the 7th/8th centuries, the navy was mainly built in Constantinople, but further major naval bases in the west were Ravenna, Carthage, and Syracuse. In the core areas of the empire, the central fleet operated from Thessalonica, Mitylene, Smyrna, Rhodes, and Attaleia. Their ports most probable represented the initial naval bases which had military installations, provided the necessary security for the fleet, and were spacious enough for a larger flotilla.

Ahrweiler suggested that a large part of the construction of the navy – both of the central and the thematic fleets – was conducted in provincial shipyards resp. arsenals close to civilian and mercantile shipbuilding[303]. She underlined that the use of the terms ἐγχώρια and τοπικά in three instances in relation to Ragusa, Lampsakos, and Paphlagonia points to locally constructed ships[304]. In fact, it seems much more likely to conceive both terms as referring to warships operating in distinctive nautical areas with regional crews.

Yet she pushed her conclusions even further. According to her, the autonomy of the naval commands since the mid-8th century included warship-building by each command on its own: »Pendant la période de l'existence parallèle de la flotte impériale et des flottes des thèmes (VIIe-XIe siècles), indépendamment des arsenaux constantinopolitains réservés à la flotte impériale, des arsenaux importants fonctionnaient dans les provinces, notamment dans celles qui formaient les thèmes purement maritimes«[305]. However, it seems as if most naval bases were restricted on repairing, outfitting, and wintering warships that had been constructed elsewhere. Although not every thematic naval command had an arsenal, the major naval themes created a construction site for warships. The commands of Aigaion Pelagos and Kibyrrhaioton foraged their own timber in 949 according to one of the excerpts in *De ceremoniis*[306]. This can only be interpreted in the sense that they had to supply themselves for the maintenance and renewal of their own ships[307]. Yet only a few of the naval bases presented above may have been construction sites for warships at that time. According to the indications presented above, Ravenna may have had a functional arsenal until the 7th century while Rhodes and Smyrna become one somewhat later. In continuity to their insignificance for the Roman navy, the Balkans parts of the empire contributed very little to the successive Byzantine navy.

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302   In the Lascarid period this probably changed, when the harbour of Holkos/ Olkos close to Lampsakos was used to construct the Propontic navy in a proper arsenal (νεώριον): Theodori Scutariotae episcopi Cyzicensis Synopsis chronikē (Sathas 470). – Georgii Acropolitae Historia, capp. 22 and 27 (Heisenberg/Wirth 36 and 45). – Ahrweiler, Byzance et la mer 437 and 315. – Macrides, George Akropolites 100-101.

303   Ahrweiler, Byzance et la mer 425.
304   Ahrweiler, Byzance et la mer 135.
305   Ahrweiler, Byzance et la mer 435 and 109.
306   Constantini Porphyrogeniti imperatoris De ceremoniis II 45 (Flusin/Zuckerman 319.57-67).
307   Haldon, Theory and Practice 263.

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Summary / Zusammenfassung

Naval bases, Arsenals, Aplekta: Logistics and Commands of the Byzantine Navy (7th-12th c.)

Based on a detailed examination of historiographical, administrative and sigillographic sources, the article reconstructs the maritime infrastructure of the Byzantine war fleet in its continuities and changes from the navy of the Roman Imperial period via late antiquity up to 11th/12th centuries, when the »pride of the Romans« (i. e. the fleet) began to wane.

Marinestützpunkte, Arsenale, Aplekta: Logistik und Kommandostruktur der byzantinischen Marine (7.-12. Jh.)

Auf einer Grundlage einer detaillierten Untersuchung historiographischer, administrativer und sigillographischer Quellen rekonstruiert der Beitrag die maritime Infrastruktur der byzantinischen Kriegsflotte in ihren Kontinuitäten und Veränderungen von der Marine der römischen Kaiserzeit über die Spätantike bis zum 11./12. Jahrhundert, als der »Stolz der Römer« (d. h., die Flotte) zu schwinden begann.